QUALITY ASSURANCE REPORT/QUALITY CONTROL REPORT

AEE/QA/PR/ 12 /2023-24, DATE: 04/01/2024		
Name of Work	:	Asphalting to main roads and cross roads in Abbigere Sapthagiri Layout, and surrounding areas in ward no 12 Shettyhalli Sub Division Dasarahalli Zone Estimated cost 100.00 Lakhs
Job Code	:	012-22-000011
Bill No.& Amount	:	**1st & Final Bill.Rs. 99,99,900.43 (Including GST)**
Name of Agency	:	**Sri. Aswathnarayana**
Type of Test Performed	:	Bitumen Content and Gradation test as per Table 500.07&Table 500.17 MoRTH V Revision.
Materials on which Tests Was Performed	:	1. Bituminous Macadam (Grade II) 2. Bituminous Concrete (Grade II)
Officers present during inspection	:	1. Sri Krishna Murthy AEE-Shettyhalli Sub Division 2. Sri .D Sundaraiah AEE-Quality Assurance
Project Management Consultants	:	M/s Civil Aim Consulting & Engineers
Observations	:	➢ Bitumen content & Gradation test was conducted by Project Management Consultants representative at random locations in presence of AEE-Shettyhalli Sub Division along with AEE QA division. ➢ The Bitumen content & Gradation Test were conducted for BC (Grade-II). The readings and results are recorded by the PMC consultants. ➢ The readings of Bitumen Content & Gradation Test results are tabulated and analysis of test results done by PMC is here by furnished. ➢ The location wise test results are reproduced in the tables shown below.
Test Locations	:	Location 1: #12 JP Nilayam 11th cross Kalanagar K G Halli (J P Deburring Brushes) Location 2: Sri Venkateshwara Industries No 05 6th Cross Near SDA School Kalanagar Main Road K G Halli Location 3: Sri Balaji Griders # 16/2,13 cross Behind IOB Bank Kalanagar Main Road, Kammagondanahalli, Jalahalli west

04/01/2024
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ -
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

012-22-000011 1st & Final

Table-01: Bitumen Content and gradation Test Results BM- (GRADE-II)

Location 1: #12 JP Nilayam 11th cross Kalanagar K G Halli (J P Deburring Brushes)
Location 2: Sri Venkateshwara Industries No 05 6th Cross Near SDA School Kalanagar Main Road K G Halli
Location 3: Sri Balaji Griders # 16/2,13 cross Behind IOB Bank Kalanagar Main Road, Kammagondanahalli, Jalahalli west

Description	Trial 1	Trail 2	Trail 3
1.Initial weight of sample (gms) w1	300	305	300
2. final weight of sample after extraction (gms) w2	289.5	294	289
3. Initial weight of filter paper (gms) w3	-	-	-
4. Final weight of filter paper (gms) w4	-	-	-
5.Increased weight of filter paper (gms) w5=(w4-w3)	-	-	-
6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5	10.5	11	11
7. Bitumen content in % (w6/w1)x100	3.50	3.61	3.67
8.Average	3.59		

SIEVE SIZE mm	Trail 1				Requirement as per MORTH table 500.07
	Weight Retained, gm	Cumulative Weight Retained	Cumulative %Retained	% Passing	
26.5	0	0	0	100	100
19.0	34.5	11.92	11.92	88.08	90-100
13.2	86.8	29.98	41.90	58.10	56-88
4.75	90.2	31.16	73.06	26.94	16-36
2.36	27.2	9.40	82.45	17.55	4-19
0.3	30.5	10.54	92.99	7.01	2-10
0.075	8.3	2.87	95.85	4.15	0-8

SIEVE SIZE mm	Trail 2				Requirement as per MORTH table 500.07
	Weight Retained, gm	Cumulative Weight Retained	Cumulative %Retained	% Passing	
26.5	0	0	0	100	100
19.0	35.2	11.97	11.97	88.03	90-100
13.2	82.9	28.20	40.17	59.83	56-88
4.75	93.2	31.70	71.87	28.13	16-36
2.36	39.8	13.54	85.41	14.59	4-19
0.3	29.3	9.97	95.37	4.63	2-10
0.075	8.9	3.03	98.40	1.60	0-8

SIEVE SIZE mm	Trail 3				Requirement as per MORTH table 500.07
	Weight Retained, gm	Cumulative Weight Retained	Cumulative %Retained	% Passing	
26.5	0	0	0	100	100
19.0	34.2	11.83	11.83	88.17	90-100
13.2	86.3	29.86	41.70	58.30	56-88
4.75	90.5	31.31	73.01	26.99	16-36
2.36	38.9	13.46	86.47	13.53	4-19
0.3	24.3	8.41	94.88	5.12	2-10
0.075	7.6	2.63	97.51	2.49	0-8

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ -
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Asphalting to main roads and cross roads in Chikkavenkatappa Layout, Stephen School back side and surrounding areas in ward no 12 Shettyhalli Sub Division Dasarahalli Zone

012-22-0000011 1st & Final

Table-02: Bitumen Content and gradation Test Results BC- (GRADE-II)

Location 1: #12 JP Nilayam 11th cross Kalanagar K G Halli (J P Deburring Brushes)
Location 2: Sri Venkateshwara Industries No 05 6th Cross Near SDA School Kalanagar Main Road K G Halli
Location 3: Sri Balaji Griders # 16/2,13 cross Behind IOB Bank Kalanagar Main Road, Kammagondanahalli, Jalahalli west

Description	Trial 1	Trail 2	Trail 3
1.Initial weight of sample (gms) w1	305	315	310
2. final weight of sample after extraction (gms) w2	288	297.5	292.5
3. Initial weight of filter paper (gms) w3	-	-	-
4. Final weight of filter paper (gms) w4	-	-	-
5.Increased weight of filter paper (gms) w5=(w4-w3)	-	-	-
6. Weight of Bitumen Extracted (gms). w6=w1-w2+w5	17	17.5	17.5
7. Bitumen content in % (w6/w1)x100	5.57	5.56	5.65
8.Average		5.59	

SIEVE SIZE mm	Trail 1				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cumulative Weight Retained	%Cumulative Retained	% Passing	
19.00	0	0	0	100	100
13.2	9.1	9.1	3.2	96.8	90-100
9.5	68.4	77.5	26.9	73.1	70-88
4.75	53.5	131	45.5	54.5	53-71
2.36	34.2	165.2	57.4	42.6	42-58
1.18	21.9	187.1	65.0	35.0	34-48
0.6	23.5	210.6	73.1	26.9	26-38
0.3	16.6	227.2	78.9	21.1	18-28
0.15	25.9	253.1	87.9	12.1	12-20
0.075	19.4	272.5	94.6	5.4	4-10

SIEVE SIZE mm	Trail 2				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cumulative Weight Retained	%Cumulative Retained	% Passing	
19.00	0	0	0	100	100
13.2	10.2	10.2	3.4	96.6	90-100
9.5	67.6	77.8	26.2	73.8	70-88
4.75	52.8	130.6	43.9	56.1	53-71
2.36	32.6	163.2	54.9	45.1	42-58
1.18	20.5	183.7	61.7	38.3	34-48
0.6	22.4	206.1	69.3	30.7	26-38
0.3	15.8	221.9	74.6	25.4	18-28
0.15	29.3	251.2	84.4	15.6	12-20
0.075	26.3	277.5	93.3	6.7	4-10

SIEVE SIZE mm	Trail 3				Requirement as per MORTH table 500.17
	Weight Retained, gm	Cumulative Weight Retained	%Cumulative Retained	% Passing	
19.00	0	0	0	100	100
13.2	9.8	9.8	3.4	96.6	90-100
9.5	68.9	78.7	26.9	73.1	70-88
4.75	50.6	129.3	44.2	55.8	53-71
2.36	35.8	165.1	56.4	43.6	42-58
1.18	20.8	185.9	63.6	36.4	34-48
0.6	20.6	206.5	70.6	29.4	26-38
0.3	16.8	223.3	76.3	23.7	18-28
0.15	27.9	251.2	85.9	14.1	12-20
0.075	24.2	275.4	94.2	5.8	4-10

Asphalting to main roads and cross roads in Chikkavenkatappa Layout, Stephen School back side and surrounding areas in ward no 12 Shettyhalli Sub Division Dasarahalli Zone

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Conclusion:

The file containing **1st & Final bill** has been submitted for the above work to QA department on 04.11.2023 requesting for spot inspection. Engineers of QA/QC division have visited the work spot on 22.12.2023

PMC team was instructed to assess the Gradation & Bitumen content test for BM (Grade II) &BC (Grade-II) on Asphalted road . The Rebound hammer test, Ultrasonic Pulse Velocity Test and Bitumen Content and Gradation Tests were conducted by PMC in presence of engineer in charge of work.

From the test results furnished by PMC, it is concluded that the results of the samplescollected are in accordance with the standards/ specifications mention in the IRC codes. However, the results submitted by the PMC have been reproduced here with for further needful action. The results checked by QA/QC relates only for item tested in the particular location randomly.

Engineer in charge of work shall ensure that work executed as per this bill is not claimed in any other bill /work or else Engineer in charge of work shall be held responsible.

Further, QA/QC directs the Engineer in-charge of the work that all materials used for the work shall be inspected, tested and accepted as per the relevant specifications before incorporation in the work. The frequencies and methods of sampling and testing materials, including those required for definite purpose and not covered by MORT&H specifications shall be in accordance to the relevant IRC or BIS or AASHTO/ASTM/BS standards in order of priority.

All materials or work not conforming to the requirements of the specifications shall be considered unacceptable and rejected. The unacceptable materials or works that are rejected shall be immediately removed unless the defects are corrected and approved by the engineer in-charge of work.

The concerned Engineer in charge of the work shall follow the direction issued by Chief Commissioner Letter number dated 01.08.2022 and 14.09.2022 and take necessary action as appropriate in accordance with the law.

Note: -

This report by QA/QC is pertaining to the work carried out in **1st & Final bill** only.

Safety precautions shall be taken at work spot to prevent any mishap, injuries or loss of life to general public and construction workers according to guidelines laid down in code of practices.

Engineer in charge of work and Agency shall ensure that if any damages or defects occur pertaining to the executed work within the Defect Liability period (DLP), The same shall be rectified immediately on top priority without fail.

Engineer in charge of work shall ensure that any changes/ modification/change in location in the sanctioned estimate to be got approved by competent authority.

04/1/2024

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ -
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಗುಣಭರವಸೆ/ಗುಣನಿಯಂತ್ರಣ ಉಪ-ವಿಭಾಗ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

Asphalting to main roads and cross roads in Chikkavenkatappa Layout, Stephen School back side and surrounding areas in ward no 12 Shettyhalli Sub Division Dasarahalli Zone